THE MOTOR AGE

THE AUTOMOBILE AUTHORITY OF AMERICA

VOL. II. CHICAGO, MAY 31, 1900. NO. 12.

ENTERED AT THE CHICAGO POST OFFICE AS SECOND-CLASS MATTER.

THE MOTOR AGE is published every Thursday by THE CYCLE AGE COMPANY, at 324 Dearborn St., Chicago.
Eastern Office: 1426 and 1427 American Tract Society Building, 150 Nassau Street, New York City.
Subscription price in the United States, Canada, and Mexico, $2.00 per year; foreign countries (in postal union), $4.00 per year, payable invariably in advance.
Advertising rates on application. Copy for changes in advertisements must be in hand the Friday previous to publication to insure insertion.

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RECORD DISTANCE FOR AN ELECTRIC

Paris, May 15.—Yesterday the B. G. S., a vehicle which was entered in the distance trials promoted by the Automobile Club de France, but which covered only a comparatively short distance before meeting with an accident that put it out of the running, in which Krieger made a record of 152 kilometers, was sent on a trial after this, the most desirable of all records for an electric vehicle.

The start was made promptly at two o'clock in the morning of the 14th, the vehicle being in charge of Dr. Garcin, who was accompanied by Georges Prade, one of the most brilliant of the staff of Le Velo, the sporting daily, to see that all the conditions of the contest were complied with—for the doctor was determined to eclipse the record of Krieger, who won the contest as already reported to the readers of the Motor Age, and to do it under the same conditions. The start was made at the hour selected, because the doctor was confident of remaining on the road for a longer time than the sun and preferred to travel the better known, smoother and less hilly part of the journey during the dark, leaving the

last and worst part of the journey to a time when he would be sure to have the benefit of daylight.

The result of the trial fully justified the sanguine expectations of Dr. Garcin, for he covered no less than 262 kilometers (162.78 miles), more than 100 kilometers farther than Krieger went.

The vehicle weighed, complete with batteries, 2,300 kilograms (5,060 pounds), of which the two batteries of forty-four elements each, weighed, assembled, 1,260 kilograms (2,772 pounds). The weight of batteries was thus about fifty-four per cent of the total weight of the vehicle, the same as in the Krieger vehicle. The elements weighed fourteen kilograms (30.8 pounds) each, of which 9.6 kilograms (21.12 pounds) was accounted for by the plates, which had a total ampere-hour capacity of 325.

The vehicle has two starting positions, five forward speeds, two reverse speeds and two electric brakes. The motor is constructed to act as a dynamo when the vehicle is descending grades.

The vehicle started on the road to Dijon in the presence of but a few spectators with Dr. Garcin and Georges Prade aboard, accompanied by M. Terry in a gasoline voiturette. The night portion of the journey was covered without any occurrence of note and the same conditions prevailed until about 200 kilometers (125 miles) had been covered. At this point the Dijon road entered Burgoyne and began to become rough and hilly. M. Terry had been playing the part of good angel, furnishing the occupants of the vehicle under trial with refreshments. After 150 kilometers had been covered the voltage dropped from ninety-two to ninety. When 200 kilometers (125 miles) had been passed the batteries showed signs of exhaustion. The first bad hill was taken in fairly good style, nevertheless, although an hour and thirty minutes were consumed in going eighteen kilometers and a consumption of 100 amperes was noted.

On the second hill the results were not so good. Still, despite the grades of eleven or twelve per cent, the vehicle struggled up, its voltage falling, however, from eighty-eight to eighty-four, but recovering to eighty-five on the far side of the hill. In the passage of the fourteen kilometers, one hour and five minutes were consumed, an average of only about ten kilometers an hour.

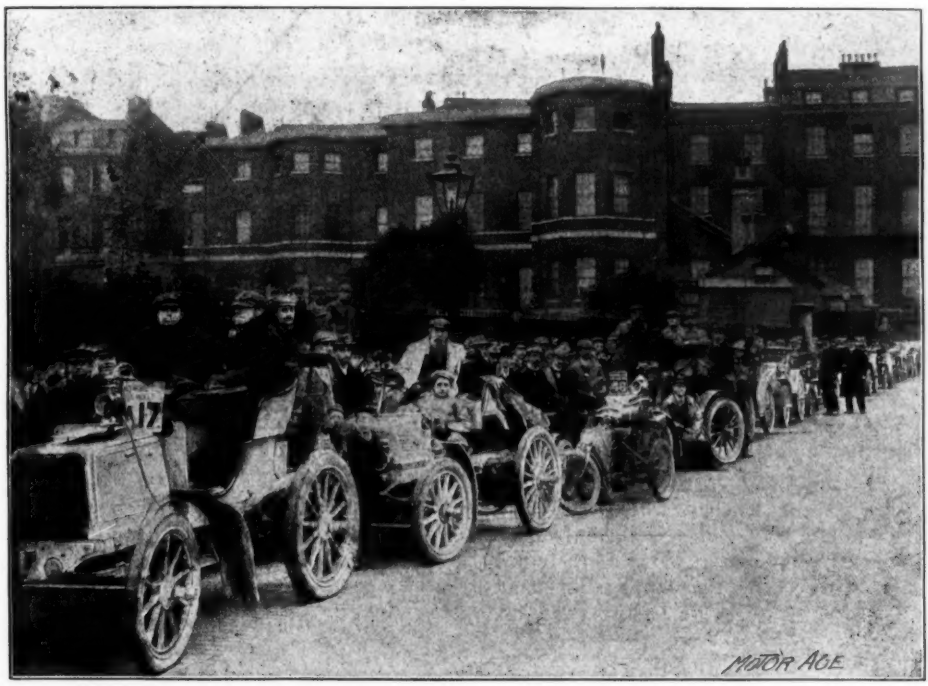
The vehicle struggled on till it finally came to a stop at 6:18 p. m. just at the village of Alesia, which name the doctor promptly bestowed on his vehicle. The 262 kilometers had been covered in sixteen hours and eighteen minutes, world's record for an electric.

DEDUCTIONS FROM THE 1,000-MILES TRIAL

In commenting on the general results of the British 1,000-miles trial, the Autocar—which covered this notable event in superb style—has the following to say:

"Now that the tour is over, and we have followed it from day to day, we can look back calmly upon the incidents thereof and form our own conclusions upon the performances of the cars, it must be admitted that the event has been a decided success. In the first place, seeing the apathy which apparently existed throughout the country upon motor matters, we were distinctly surprised at the enthusiastic welcome accorded the autocarists at every point of the thousand miles, not only in the towns, but even in the country villages. That the cars favorably impressed every onlooker can scarcely be hoped for, seeing that, following in each other's dust on dusty days, the occupants presented a decidedly dirty appearance, whilst their leather garments and varied headgear and goggles certainly did not add to their beauty. Should another such tour be undertaken, it would be well, if it were possible, either to arrange that the run should be made at greater inter-

vals between the cars, or that compulsory halts for a brush down should be made, at any rate, before entering the red flag controls—that is to say, of course, if the object of the tour is to impress the public. Apart from appearance, however, there is ample evidence that the public were impressed, and impressed favorably, with the wonderful ease of management and general reliability of the cars. Some, we believe, were impressed unfavorably with their speed, but that is a matter upon which opinions largely differ, and speed to the average British mind undoubtedly is an attractive feature. Another point, too, in which, we believe, the tourists distinctly scored was the immunity from serious accident throughout. When it is remembered that the cars passed through many districts where autocars are rarely, if ever, seen, and where, naturally, horses and other animals have not been educated to encounter them without fear, the very little trouble experienced by the automobilists from this cause is remarkable. We were not stopped half a dozen times in the whole tour on the cars on which we drove on account of any restive horses, and it is curious to note that the majority of instances of horse-frightening occurred in the case of motor cycles and not with the larger cars. When it is remembered that the aggregate mileage covered by the cars taking part in the tour must have been considerably over 60,000 miles, during which not a single accident of any kind happened to anyone engaged upon them, it is a striking testimony to the safety of autocaring as a pastime and sport. The accidents to others that occurred were caused through the unmanageability of animals, and when all the circumstances are considered, the fact that only one man and one horse were injured in the entire run is ample proof of the safety of the autocar when considered from the point of view of other users of the road as well as of the considerate manner in which the cars were used throughout the tour. In the matter of "smaller game," as one sportive member put it, "the bag" was somewhat larger, and may be summed up as seven or eight dogs, a sheep, a cat, and a spar-



GROUP OF VEHICLES AT THE END OF THE 1,000-MILES TRIAL.

row. Of the cars themselves, there can be no two opinions about their general behavior en route. Of course most encountered some cause for minor stoppage at one time or another. Circulating pumps, pneumatic tires, and ignition gear were most generally the cause of delay, but the actual breakdowns were few and far between, and a feature of the tour was, perhaps, the lightning repairs which were in some cases executed, and which enabled cars to continue in the run with but a few hours' delay, which would in ordinary hands and in ordinary times have possibly been stranded for a day or two. The driving generally, although some fast work was put in by the speed cars, was characterized by caution and consideration for the public, and we saw very little in the way of reckless driving, although the French drivers of several of the foreign-built cars apparently could not disabuse themselves of the idea that the whole affair was a race, and they, with one or two others who had personal interests in the cars they drove, were somewhat given to ignoring the green flag controls, and thus picking up time on the faster cars in front, which loyally adhered to the regulations. The hill-climbing contests showed that all the vehicles in the trial were able to be got up the severe gradients they were put at, although several of them could only do so by putting out one or more of their passengers, and some by stoppage and making repeated starts and short runs, and we regret that circumstances prevent our publishing a full record of these incidents, which would, we feel sure, have been of considerable interest and value to our readers."

In commenting on the individual performances of the various vehicles, the Autocar says of the Locomobile, the only American vehicle in the trial:

"Needless to say, a great deal of interest centered in this vehicle, and it must be admitted that she went through the trials a great deal better than many people expected. The prognosticated failure of the boiler before half way, which more than one had anticipated, did not come off, and she appeared to experience no inconvenience from the various qualities of water picked up en route. Whilst she did not distinguish herself as a speed vehicle, she came through steadily, and, in spite of her light construction, experienced but one mishap—omitting tire troubles, which were numerous, and which show that the single tube tire, as used, is too light for the work to which the car was subjected. The light chains and other parts, where breakages were expected by many, stood up throughout the journey. The fitting of the condensers enabled her to avoid visible steam in ordinary running, but not when negotiating steep gradients, or endeavoring to force the pace. The greatest difficulties of working her appeared to exist during a rear gale, when the boiler fires could be but with difficulty kept alight."

FROM THE FOUR WINDS

RACING IN VIENNA

Paris, May 15. — Reports come from Vienna of a road and track race at the Austrian capital, which was patronized by the nobility, some of the nobles, indeed, taking part in the events. In the morning there was a road race of 4.2 kilometers in length, which was won by the Frenchman, Gaste, in 6:24 1-5, with Dietrich second. This was in the professional class. The amateur class rode over the same course. Stead won, followed over the tape by no less than four sportsmen of rank.

In the afternoon Gaste was again the hero at the races held on the Prater track, winning the 10,000 meter race by more than a lap from Deitrich. After this he went for the Austrian one-hour record, which he succeeded in breaking, placing it at 69,886 kilometers (43 miles 740 yards).

TO OPERATE PARK BUSSES

Cleveland, Ohio, May 28.—The Washington Electric Vehicle Transportation Co., operating electric cabs in New York and Washington, has made application to the Cleveland park board for the privilege of operating electric 'busses through the parks and boulevards of the city. The board has practically decided to inaugurate a 'bus system of some kind and a number of the members are in favor of automobiles.

A TRANSCONTINENTAL TRIP

James Ward Thorne, the son of a Chicago millionaire and a student of Princeton University and a member of the class of 1900, left Princeton recently, according to a daily paper, for a trip across the American continent to the Pacific coast.

Forsaking his senior year studies last December, Thorne said goodby to his native land and sailed for Paris. He returned only a month ago. While in the French capital Thorne became well known as a chauffeur on the boulevards, and also made some long distance records between Paris and Marseilles on his electric machine.

It was about three weeks ago that Mr. Thorne decided upon his trans-American journey. A party of friends dared him to make a long trip, to show his skill as an automobilist, and he agreed on the spot to take the ride. Mr. Thorne will use a specially constructed automobile wagon. It is a long, closed affair, with several compartments, provided with cooking utensils, beds for three persons and a storage room for guns, fishing tackle and cameras. No attempt at a time record for the trip will be made.

MAY RUN BIG RACE

It is now pretty nearly understood among automobilists that the International cup will be run, in spite of all rumors to the contrary, says a dispatch to the New York Herald.

These rumors, as is well understood in France, had their origin in the severe manner in which various prefects and the police dealt with "chauffeurs," practically prohibiting automobile races in France. It is now believed that such difficulties as existed have been removed, at least so far as the International Cup is concerned.

The authorities are, however, reticent on the subject.

Up to the present three Belgian automobiles have entered for the contest. One German automobile is engaged. America is represented so far by only one automobilist, Mr. Winton.

This plucky American has now arrived in Paris, and is making preparations for the race. His racing machine is not yet visible, but it is understood he will make short trips on a trial machine. Mr. Winton is accompanied by four assistants.

In regard to France, the three automobiles which are to contest the race on behalf of the Automobile Club de France

are now ready for business. They have been painted blue, which is the color arranged for the French racers.

All the French competitors have been out on trials, and it is said that M. Rene de Knyff is particularly keen in getting his automobile into the best form.

MOTOR INDUSTRY IN AUSTRALIA

Sydney, N. S. W., April 25.—Motor vehicles are beginning to make their appearance felt in Victoria. There are over twenty at present running in that colony, comprising one motor bicycle, twelve motor tricycles, two motor quadricycles, two motor pacing tandems, one Hertel Pender motor car, one oil motor tandem (colonial built by Mr. Sutton), one Thompson steam phaeton (colonial built), one oil motor phaeton (colonial built by Mr. Sutton), one Peugot petrol motor phaeton, one Benz motor car and an American steam motor car.

Dr. Syme, a well known medico of Kew, Victoria, has imported a motor phaeton of the Peugot type. It is right up to date, and is driven by a five horsepower petrol or gasoline motor. The vehicle will seat four persons. Dr. Syme is the first doctor in Australia to purchase a motor vehicle. Now that he has set the example, the motor vehicle should find a ready sale amongst the doctors out here.

On March 29 the first general meeting of the Thompson Motor Car Syndicate, of Melbourne, was held, with Kelburn E. Edge in the chair. Messrs. K. E. Edge, S. G. Pirani and E. G. Wilson were elected trustees and E. L. Holmes managing trustee. It was decided to form the syndicate into a limited company and the arrangements for carrying this into effect were left in the hands of the trustees. The car is to be patented throughout Australasia, the United States, Great Britain and Canada. The company is to be known as "The Thompson Motor Car Co., Ltd." The proposed capital is $10,000, made up of two hundred shares of fifty dollars each. The Thompson car, which is built in Victoria, was exhibited at the Sydney agricultural show during Easter and secured highest award. It did a good deal of touring around Sydney during the Easter holidays, in charge of E. L. Holmes, and created a most favorable impression, being the first vehicle of the kind seen in this colony. It is a very handsome car and travels along very smoothly and quietly. When the motor car boom reaches Australia "the Thompson" should more than hold its own. The imported vehicle may be faster, but it cannot be any handsomer than this colonial manufactured car.

The Dunlop Tire Co., Australasia, have had the agency of the famous De Dion motor offered to them for the Australian colonies, and the big tire company is now considering the advisability of taking up this valuable agency. A sample De Dion voiturette, 3½ horsepower, is now on the way out to Melbourne for experimental purposes, and should the car prove a success on the colonial roads it is more than likely that the Dunlop company will add a motor department to their present extensive tire business.

There is every prospect of the motor car boom attacking Victoria in earnest erelong, and when it does the local builders of motor cars in that colony should reap benefit, as the heavy duty—twenty-five percent on imported motors—will allow them to considerably undersell the imported motor vehicles. In New South Wales there is no duty on bicycles or motors and local building is almost a dead letter.

SOME ENGINEERS' OPINIONS

At the fifty-first meeting of the American Society of civil engineers, at Cincinnati, a paper on "The Automobile Wagon for Heavy Duty" was read by Arthur Herschman.

The beginning of his paper is given to a clear and fair discussion of the automobile problem, which, under the treatment of the author, leads inevitably to the steam-propelled vehicle as the best as yet in sight for heavy trucking and all-round work, and he, who is consulting engineer to the Adams Express Company, then proceeds to give a description of a steam-propelled vehicle designed by him and built for the company. The details of the truck are discussed in an interesting manner, and the paper is an interesting and valuable one all through. The writer thoroughly believes in the auto-

mobile. He says that "if the motor wagon is given an unobstructed field and fair play, it will hold its own and oust the horse truck in short order. The change must come, and with, perhaps, the exception of the harness maker, everybody will benefit by it." Some interesting tables of comparative operating expenses of a two-horse wagon and a three-ton automobile are given in an appendix, with other data of value to those who are struggling with this problem of the hour.

In discussing the paper, one member expressed the opinion that rubber tires are unsuited to heavy duty. He also expressed the opinion that wagons for heavy duty should be driven and steered by all four wheels, and sketched on the blackboard an arrangement of his own for this purpose.

Another member gave his experiences with gasoline and steam-driven pleasure carriages, which were decidedly favorable to the latter, and the tenor of most of the remarks by others was that the steam engine was the preferable motor for the purpose. Its complexity was admitted, but its flexibility in the matters of effort, speed and reversibility was considered to more than offset this. One speaker, however, said that a gasoline engine is now made which is capable of being reversed and of having its speed changed, though he was not aware that it had been applied to a motor carriage. The failure of both electric and gasoline wagons to meet the conditions of Cincinnati, where hills abound within the city limits, was brought out by one speaker, who believed that a good steam carriage would have a large sale in that city.

"THE AMERICAN MOTOR SCHEME"

I stated last week that the big scheme which entailed the promotion of a company to exploit the long list of alleged patents possessed by the British Motor Co., and also the Pennington patents, had not matured. I have obtained further information on the subject which leads me to believe that it has, for the time being at least, completely collapsed. It was proposed to form a company entitled the Anglo-American Rapid Vehicle Co., with a nominal capital of $75,000,000. As stated by me last week, the men who were engineering the scheme were, I understand, Messrs. Hooley, Lawson, Pennington, and Harvey. The first-named trio are sufficiently well known.

Mr. Harvey's name came into prominence the other day through his being the victim of an assault made upon him at Huntingdon by Hooley. Political reasons were said to have caused the disagreement, but it is not without the realms of probability that disappointment in connection with this motor project had something to do with the case. The deal was being arranged with Mr. Gibbs, a reputed millionaire in Philadelphia, and Messrs. Lawson and Pennington were, I am told, both in Philadelphia with the object of fixing matters up and collecting a trifling deposit of something like £30,000. I am told that a cable stating that the deposit had been paid was received in this country, and that telegram was used in a manner not altogether unfamiliar to such as have had dealings with more than one of the men referred to. But it appears, presuming my information is as reliable as I have reason to believe, that the message was not justified by events. I am told that Mr. Gibbs has finally refused to have anything to do with the matter, and the outlook for the scheme is consequently very cloudy. It may be recollected that on the strength of this scheme there was a considerable movement in British motor stock.

The American papers were full of the project, and in New York a number of the motors were on view. There are people who are skeptical as to the value of the patents for which so much was asked, and, in any case, I think Mr. Gibbs is to be congratulated on having steered clear of a venture that might have made deep inroads into his millions. I have some interesting information regarding the internal movements in the furtherance of this alleged still-born scheme which I hope to receive permission to publish soon. American papers please copy.—The London Cycle Trader.

CLEVELAND TRANSFER CO.

Cleveland, Ohio, May 28.—The Biggs-Riblett Transfer Co., capitalized at $200,-

000, has been incorporated with headquarters in this city by E. B. Tidd, Al. Barge, C. F. Riblett, George H. Worthington, C. E. Grover and other well known citizens. The officers of the company announce that an automobile service will be operated in connection with a carriage and transfer business.

AUTOS SOLD AT AUCTION

A new departure in the progress of automobilism was made recently in Paris, the occasion being the first public auction sale of automobiles at Cheri's branch establishment at Neuilly.

The fact that Prince Pierre d'Arenberg, M. Edmond Blanc, Comte Gerard de Ganay, M. Michel Ephrussi, Comte de Beaumont, Vicomte Foy, Baron de Dietrich, Vicomte de Perigny, Marquis de Balleroy, Prince Obidine and others were willing to dispose of their automobiles was sufficient to take out to Neuilly a large attendance. The Automobile Club was largely represented, the president, Baron de Zuylen, and a considerable number of members being present.

A large majority of the automobiles for sale did not change hands, the upset price not being reached, but some idea of the value of the machines sent for sale may be gathered from the fact that the various bids aggregated over 300,000 francs.

"I am perfectly satisfied with the results," said M. Halbron, head of the firm of Cheri's. "I said before the sale that if we disposed of only one machine I should be satisfied with the experiment, and the results exceed my expectations. Attention has been called to this mode of disposing of automobiles, and the new movement has called forth good support from chauffeurs.

"Only a few minutes ago a prominent member of the Automobile Club came up to me and assured me that he would like to send several of his machines to be sold at auction, and his example was followed by several others present.

"While some good prices were realized in several cases, there was shown a disposition to hold for higher prices. No doubt several owners sent up their automobiles to ascertain what prices would be offered at public auction. I hope within a fortnight to have another lot of automobiles to dispose of."

The question of holding an auction for automobiles was widely discussed by the chauffeurs present. The opinion was unanimous that the idea was a good one.

Baron de Zuylen, president of the Automobile Club, said: "The auction sale today marks an important point in automobilism in France. The effect of a sale such as the present one will be good. Machines will be sold at prices within the reach of all. The automobiles offered for sale today were all good machines. The reason why the owners are willing to sell them is that they want to buy newer and later models."

"Is the sale in any way due to the strict way in which the new regulations against excessive speed of automobiles in Paris are enforced?" I asked.

"Not at all. The sale is a new enterprise, which will prove to the advantage of the public who desire to have a useful, satisfactory automobile at a moderate price, and of enthusiastic chauffeurs who desire to keep in the foremost rank with new types and models, and who have now a very simple way of disposing of models of an older type."

Baron de Dietrich said: "The idea of an auction sale of automobiles is a good one. The movement will be popular, because it will take the automobile business out of the way of intermediaries to a very great extent. Perhaps if this sale had been widely known before the auction better prices would have been realized."

M. Charron said: "I tried an auction sale a year ago, but have not cared since to repeat the experiment, since I let my machines go for prices much under their value, and I estimate my loss by that sale at 15,000 francs. Buyers at auction sales want to get a good thing—in other words, they want to get a valuable machine at a price much lower than the machine is worth."—N. Y. Herald.

ATTITUDE OF THE DAILY PRESS

Under the captions given, daily papers in various parts of the country deal in a progressive manner with automobilism as follows:

March of the Auto-Bus

It is a logical and natural evolution of the transportation problem that the perfection of the automobile should mark the passing of the street railway tracks which have so long cumbered the streets of cities and which have been so prolific in franchise scandals and corruption. The substitution of noiseless auto-buses for street cars would not only dispose of the franchise question, the most troublesome problem in municipal government, but would also solve the problem of smoothly paved streets. Asphalt would take the place of cobblestones in the business streets and the street cleaning problem would also be simplified.—Chicago Times-Herald.

Automobiles and Public Safety

There is the same uproar about "the arrogance of the automobile" that was formerly blatant against the bicycle rider. No doubt there are cases of accident in which the operators of automobiles are to blame. But there are probably more cases in which the people who were hurt conducted themselves in a manner that would have "rattled" the most experienced and careful of steersmen, and thus brought their misfortune upon themselves. The accidents which occur when novel locomotive agencies are first employed are attributable to psychological vagaries rather than to reckless mechanics. Away back in the '60s, when horse cars were introduced in Milwaukee, people were killed by them, just as people were killed later by the electric cars, which now are rarely the instrumentalities of injury to any human being. When cable cars were a novelty in Chicago, accidental deaths were numerous there for a while; but fatalities caused by the cable cars are rarely heard of now. So it has been with bicycles. The average pedestrian is no longer nervous when a wheel approaches from a distance. He is content to leave it to the wheelman to manage matters so that no harm shall result—and the wheelman does. Of course the automobile steersman must acquire perfect control of his machine before he ventures upon frequented thoroughfares. Otherwise there will be a potentiality of juggernautic slaughter in his approach. But with competent operators automobiles will become even less dangerous than horses, when the public grows used to them—for the horse sometimes becomes frightened and plunges in a crowd or dashes madly away.—Milwaukee Evening Wisconsin.

The Arrogance of Automobiles

Complaints against the recklessness of the men who drive automobiles have become somewhat general. They run at so high a rate of speed, it is charged, that pedestrians are hard pushed to get out of the way. In dealing with other vehicles it is claimed that the horseless wagons show an astonishing degree of arrogance. They seem to take it for granted that they have the right of way on all thoroughfares and that the ringing of their gongs is sufficient notice to all other vehicles to clear out of the way.

It is not to be expected that the advent of the automobile will be unmarked by criticism. People with long memories will recall the storm of protest that followed the opening of the cable roads. The public generally had got used to the horse cars. They knew just how much time to allow to get safely out of the way of an approaching car, and as a consequence there were comparatively few accidents. But when the cable came sweeping down the street pedestrians were frightened. They did not give themselves sufficient time to avoid the approaching trains, and a number of accidents resulted. But in the course of time the cable became a familiar thing, and contempt born of the familiarity took the place of fear.

When the trolley was introduced a similar period of excitement and protest fol-

lowed. There was a long list of injured before people learned to make allowances for the greater speed of the cars propelled by electricity. Now the automobile, in its turn, must pay the same penalty. At the same time, it is true that many drivers of automobiles run their vehicles at a higher rate of speed than is allowed by the ordinances. Particularly is this noticed in the parks, where also automobile drivers seem to pay little attention to the rights of pedestrians and of the drivers of carriages drawn by horses.

In their own interest the automobile companies and private owners should see to it that, until horseless vehicles become more familiar, greater care is taken in their management. Else public sentiment is likely to force the passage of ordinances governing the running of automobiles which, while perhaps at present necessary, may become burdensome after horseless vehicles become common.

It will be easier to prevent their passage in the first place than to secure their repeal at some time in the future.—Chicago Tribune.

A Congenial Idiot

As a prelude to its comment on the recent sweeping decision of Judge Sutherland of Rochester, the Washington Post says:

"Perhaps the most conspicuous thing developed by modern progress is the fact that the horse stands in the front rank of protest against innovation and improvement. A congenial idiot, dependent upon man for guidance, safety, even existence, the horse has done his best to discourage every advance of civilization. The horse shied at bicycles; he pranced and snorted and sacrificed life and property to his stupid fear of cable and electric cars. Now he is on his hind legs about the automobile. He is an obstruction. He would put an end to human exaltation if he could."

Another Good Roads Agent

Now it is the automobile clamoring for good roads, and as these are four-wheeled affairs and take up the same room as a carriage, buggy or wagon, less the horse, as good road agents, it is certain they will be much more successful missionaries than are the bicyclists. No driver of a horse turnout is going to dispute with the driver of one of these automobiles as to the turning out. With incontestable rights of the road, coming most forcibly because the automobile can compel the due observance of those rights, a rapid advance is going to be made in securing better roads. The owners of automobiles will exert an influence upon public authorities and upon public sentiment of the greatest value in bringing about a reformation in existing road methods. This increasing force, intelligently cooperated with by the bicyclists as individuals and as associations cannot fail to impress itself upon individuals and the community alike. From the combined influence of automobile and bicycle,, good judges say the work of securing greatly improved American highways has advanced at least a generation.—Racine (Wis.) Journal.

ELECTRIC VEHICLE CO.'S CONDITION

The New York Times recently discussed the Electric Vehicle Co. on its financial page as follows:

For some weeks past there has been much inquiry about the reasons for the low price at which the stocks of the Electric Vehicle Co. have been selling. In many quarters it has been said that there is something at fault in the condition of the company's property or that otherwise the common stock of this company, which last spring sold as high as 150, would not now be selling at about one-sixth of that price. Others—and they are closer to the management of the company—have all along maintained that the seeming slowness with which the company's business is being developed was the result of prac-

tical difficulties that could not be immediately overcome, and also to the necessities of the business, which was one that required careful development. When the dividends on the common stock were suspended, after having been paid for one year at the rate of eight percent, there was some selling of the stock, seemingly on the belief that dividends were suspended for the reason that the company's business was not in good condition. These rumors have been oftentimes repeated and have resulted in the low price at which the stocks of the Electric Vehicle Co. are now selling, and also in heavy declines in the securities of all of its subsidiary companies. The stocks were for a long time the object of much interest in the market for outside securities, and the condition which they have now reached is the subject of much comment. Inquiry among those whose opinion of the matter is entitled to consideration points to the conclusion that there has been no undue delay in the development of the business which this company has undertaken, and also to the fact that much more progress has been made than is generally supposed among those trading in the stocks.

In explanation of the long time that it has taken to introduce a reasonable number of electric vehicles, it is said that one of the principal difficulties in the way of a more rapid development of the business, was the impossibility of securing properly trained employes for the various departments, in view of the fact that the undertaking is a new one. The Electric Vehicle Co. has established subsidiary companies in many large cities, and has devoted much attention to this preliminary work, requiring much time and producing results which are not at first fully apparent. The officer of the company quoted stated that the company has of late made much progress, and that during the coming summer a large number of vehicles will be in operation in several cities. Thus far the field in New York, it is said, has been only very partially developed, but it is said that the New York Transportation Co. is now covering more mileage than any other livery company in the city. The New England company is reported to be doing a large business in Boston, and it is about to extend its operations to Newport, where a hundred vehicles or more will be in operation during the coming summer.

The Electric Vehicle Co. itself is now manufacturing many more vehicles than it was a short while ago, and it is expected that its output this year will not be less than 2,000 vehicles, and may run as high as 3,000 or 4,000. This is said to be in excess of the output of all the other automobile companies in this country combined. The Electric Vehicle Co. has also extended its operations to some extent in foreign countries, and has already established a station in Paris and is regularly operating vehicles in that city. These statements, from an officer of the company, will be of much interest to those who have supposed of late that the business of the company was less than it was a short while ago. The present financial condition of the company is said to be excellent. Its cash assets are stated to amount to $5,000,000. This, officers of the company claim, places the company in a position to do a very large business, insuring reasonable profits. Moreover, the company has invested in real estate and plants over $2,000,000.

During the past week nearly every one of the electric stocks sold at lower figures than have been recorded at any time since they have been put in the market, a fact which stimulated inquiry concerning them, and made them the subject of much talk among those interested in the outside market. So many unfavorable rumors have of late been circulated in regard to these companies that the statement of this officer of the company denying them has particular interest.

CARE OF SPARK-COIL BATTERIES

The discovery and introduction of the accumulator or secondary battery marked the commencement of a great epoch in the industrial application of electricity, says the Automotor Journal. There was a time when mankind were obliged to depend for electric currents of any intensity on the primary battery. After that came the dynamo; then the secondary battery. The advent of the secondary battery revolutionized electrical engineering. Its effect would have been more revolutionary still had it been lighter. Amongst other things it made the electric car a commercial possibility. There is a German proverb to the effect that care has been taken that the trees do not grow into the sky. Had some light metal—say, aluminum—been suitable for use in the accumulator, instead of the exasperatingly heavy metal—lead, the introduction of the accumulator would have heralded an industrial revolution of as wide reaching a character as any the world has yet beheld.

To the automobilist the accumulator is an object of considerable interest as the source of energy for all electromobiles. At present it is proposed to discuss the management and treatment of the accumulator in an humbler, though perhaps not less useful, sphere—as a source of current for the various electric sparking appliances that are employed for the ignition of the explosive mixtures in certain classes of oil engines adapted for the propulsion of motor cars.

A great many attempts have been made to work the induction coil type of ignition appliance from primary batteries—the so-called dry cells of commerce. It is no use mincing matters—the dry cell is not up to the job. It will work an induction coil intermittently. It will not give satisfaction under the conditions involved in long and continuous running. That motor cars, the sparking appliances of which are supplied with current by dry cells, do not always jib after an hour or two steady running, is due, as often as not, to the fact that when the engine cylinder gets nice and hot it very frequently, indeed, runs by self-firing on compression, and would run equally well if the electric ignition device were put out of action altogether.

To be satisfactory the sparking appliance must be run by some form of secondary battery or accumulator. A well made accumulator is a high-class appliance. Like a good horse, to give satisfaction, it must be properly cared for and treated. Thoughtless, inconsiderate, and brutal illusage will, in the one case as in the other, convert an agent of the highest capabilities into a useless wreck in an inconceivably short space of time. That a well-made accumulator has been found to act unsatisfactorily in any circumstances to which it has been applied is a proof that it has been recklessly and unintelligently maltreated. A society for the prevention of cruelty to accumulators is much needed. The present article is designed, among other things, to point out some of the malpractices in the use of accumulators for sparking coils, which such a society should attempt to suppress.

There are two main types of lead accumulator—the Plante and the pasted. Practically this subdivision refers to the positive plates. The Plante type of negative has to all intents and purposes been given up, so that in both classes of battery the difference is in the positives—the negatives in either case being of the pasted variety. The active material in accumulators consists, as every one is aware, of spongy lead in the negative plate, and of electrolytically-produced lead peroxide in the positive plate. In the pasted type of plate the lead peroxide is formed by electro-chemical super-oxidation of the paste of red lead from which the grid, or framework, (constructed of metallic lead) is coated. In the Plante type some method of construction is adopted by means of which a very large real surface compared with its apparent surface, is given to the plate. On this surface a coating or layer of peroxide of lead is produced by the prolonged electro-chemi-

cal action of the charging current alone. The peroxide in this class of plate is much more adherent than in the pasted plate, and the result is that these batteries can be both charged and discharged at an enormously higher rate than the pasted kind. The first thing, then, for the motocarist to do is to make quite sure of the type to which his battery belongs. Suppose he has a Plante battery capable of giving him five amperes for ten hours. He will do it no harm if he discharges it at fifty amperes for one hour. A similar pasted battery discharged at that rate will be ruined in once or twice. On the other hand, the pasted battery has a considerably greater capacity for the same weight. On the whole, however, considering the great convenience of being able to charge the battery quickly, the much wider limits of a safe discharge, and the fact that the weight of the one or two cells required for working the coil is not a very serious consideration, the Plante type of cell is much the best to select for the purpose in view.

The sparking coil has some characteristics that enable it to ruin either type of battery very quickly if proper measures are not taken to prevent their influence producing its full effect. Generally speaking, the "make and break" required for the working of the coil is produced either by a contact breaker, on the coil itself, which is switched on by some moving part of the engine, or some moving part of the engine itself acts as a contact breaker. Now, the effective resistance of the coil, when working normally, is nearly all due to its impedance. If the engine happens to come to rest at the point at which the contact-breaker is switched on and the contact-breaker sticks, or if the moving part of the engine which acts as contact-breaker comes to rest so as to close the circuit through the coil, the accumulator may be sending fifty times its normal current through it. This is, of course, in most cases ruinous—particularly so with a pasted accumulator—and some form of cut-out; either a mechanical arrangement or a fuse ought to be introduced to prevent it. Nevertheless, it is very seldom done, and then the autocarist wonders why his accumulators have ceased to give him any current.

Another point of importance is this. No accumulator ought ever to be discharged below 1.8 volts per cell. The reason is not quite clear. The fact is, however, certain. No accumulator which is frequently discharged below that point will last long. A small voltmeter reading up to 2½ volts ought therefore always to be carried and the cells recharged as soon as they read 1.8 volts while working normally—not, be it remembered, when standing idle. Every accumulator after a rest will pick up and read about two volts on open circuit unless it has been discharged beyond all reason. The open circuit reading is therefore illusory. To show how important this precaution is, it may be mentioned that the Tudor company will give no maintenance guarantee, unless this proviso be strictly enforced and carried out. It is not too much to say, however, that this is a point that the autocarist almost invariably and most persistently ignores. Further, no battery should ever be left uncharged for any length of time.

That the plates should be well covered by acid is a matter of the utmost importance, loss of liquid by evaporation, gasing, and often by imperceptible leakage always occurs with batteries. It must be made good with pure acid and water of the right strength, about 1.15 specific gravity. The addition of impure commercial sulphuric acid containing iron, arsenic, chlorine, and other abominations will ruin the battery. There is a tremendous amount of alleged brimstone acid in the market. Most of it is an absolute fraud, and unless the purchaser can thoroughly trust the people he is dealing with, he ought to test the acid, at any rate, for iron before buying. If the tops of the plates are allowed to stick up above the surface of the acid the effect of the "wind and water" line is to cause sulphating of the tops of all the plates. This means in the first instance loss of capacity; in the second, if the evil is allowed to continue, total destruction of the battery.

Every accumulator cell should have a proper vent-hole and plug. The hole should be large enough to enable the plates to be seen when it is removed. The assistance of a lighted match should not be used for the purpose of facilitating this

inspection. The gases given off during the charging of an accumulator are highly explosive, and the amount collecting at the top of a very moderate-sized cell can produce a loud and even dangerous explosion. The plug itself should fit in tight, but have a pin-hole to permit the escape of any gases formed by local action while the accumulator is standing idle. Plugs of this kind are usually provided by the makers, but, like other things, they have a tendency to get lost. Under such circumstances the motorcarist has been known to supply their place by a plug without a pin-hole, hermetically sealing the cells up. This he must not do, the pressure of gas likely to result being very injurious to the ebonite box in which the battery is lodged.

Another matter to which sufficient attention is by no means always given is the importance of keeping the exterior of the cells dry. Dilute acid is an excellent conductor of electricity, and moistening the outsides of the ebonite boxes with it means leakage of current whether the battery is working or not. In particular, acid allowed to splash out and accumulate in a film on the lid of the box, extending across from one terminal to the other, may cause quite as much mischief as joining them by a thin copper wire would do.

These are the main points to which the motor car man should give his attention in employing accumulators for working sparking coils. If attention be paid to these details, accumulators of the Plante type should be capable of standing at least 200 full charges and discharges, those of the pasted type from 120 to 150. It has been assumed throughout that the accumulators are properly constructed—provided with adequate bridges and separators and other matters of detail properly carried out. This is sure to be the case if the cells are obtained from any of the well-known makers, and the motocarist cannot be too earnestly warned against purchasing the wares of unknown and untried accumulator makers.

For some time past Herr Schoop, the accumulator expert of the Oerlikon company, has strongly advocated the employment of water-glass in secondary batteries. A saturated solution of water-glass added to five times its volume of sulphuric acid of the strength used in batteries sets, after a few hours, in a clear, transparent jelly. Used as the electrolyte in batteries for motor car purposes this composition appears to present great advantages. Leakage and mess are completely prevented, and if any of the boxes crack there is no trouble. But its principal value is due to the fact that it largely obviates all chance of injury to the battery by short circuiting, due either to the plates buckling, or some of the material getting across and connecting the positive and negative plates together. Further, if short circuiting externally, or too great a discharge, does from any cause, take place, its evil effects are very much minimized, owing to immobility of the electrolyte which limits the supply of acid to the plates, without which no action can continue. For these advantages the diminution of the capacity of the battery by from ten to twenty percent, which results from the employment of the water-glass, does not seem an exorbitant price to pay.

TO AND FROM EDITOR AND READER

WANTS A RELIABLE MOTOR VEHICLE

Editor the Motor Age:—

Can you give us information as to a positive, powerful, safe auto that will climb any hill and start promptly, go anywhere over any roads at any time, through deep mud and snow, the hottest and the coldest weather?

We understand automatic, oil-burning, steam engines, as we have one in use in our printing department, but the gas and gasoline, spark-ignition engines are a mystery to us. Can you advise us as to their advantages as compared with steam motors? We intend to purchase one as soon as we are sure we are making no mistake. We are afraid, however, that the electric spark ignition will be an annoyance and that in either a steam or water-cooled gasoline engine we would have trouble in the severe cold weather —ten to twenty degrees below—from frozen pipes. Electricity is obviously impractical in this locality.—Drs. J. C. & F. F. Feather, Sandy Lake, Pa.

—

Rather a large order!

There are no motor vehicles built that will run satisfactorily without attention in the best of weather and under the best of conditions, let alone Arctic weather and the worst of roads. However, with proper care any of the better class of vehicles will behave well in any kind of weather.

With the steam carriage, the boiler and tank should be emptied in cold weather, unless kept in a warm stable, if the vehicle is to be allowed to stand any length of time. If it be on the road, the fire should be kept going all the time.

With a gasoline vehicle, the water should be emptied when the engine is not running. If the carriage must be allowed to stand, the engine should be kept running, the power being disconnected. The Motor Age recommends its correspondents to communicate with some of the leading makers of both steam and gasoline driven vehicles, telling their needs fully.

A description of the principles of the gasoline engines was given in this paper in its issue of December 14, 1899. A similar but fuller description will appear in the issue of June 28, next. No fear need be anticipated from trouble with a good electric sparking device.

CONSTRUCTION OF A CARBURETER

Editor The Motor Age:—

Can you give me any information how to build a simple carbureter? Also how to figure the horsepower of a gasoline engine already built, and how to determine dimensions for an engine to give a certain horsepower?—O. Anderson, 18 Scott street, Chicago.

—

Numerous descriptions of carbureters

NOTE—To make clear the functions of this department of the Motor Age which has become a fixture, under the above caption, the editor begs to state that all subscribers of the paper are at full liberty to take advantage of it to ask any and all questions pertinent to the scope of the paper, which questions he will answer to the best of his ability, either in print or by personal letter—the former when the questions are of such a character that they or their answers may prove interesting to the general reader, and the latter when such is not the case.

Communications of a character generally interesting are also welcome.

Correspondents are requested, however, to make their communications as short and to the point as possible. It is not necessary for them to eulogize the Motor Age or to flatter the editor in order to secure answers to questions or the publication of interesting letters. The well known modesty of the editor would prohibit the publication of such parts of the letters, in any event.

To receive attention correspondents must sign their names and addresses, which, however, will be omitted from published letters, if the correspondent so requests. It is the editor's desire, however, to make this a department in which readers of the Motor Age will feel glad to come before the motor-vehicle public without concealment.

The editor will be grateful for the correction of any mistakes that may creep in, as well as for suggestions from readers, whether pertinent to this department or other portions of the paper.—Ed.

have appeared in The Motor Age. It depends largely on the conditions what style is most desirable. However, the following is a description of the simplest form of carbureter:

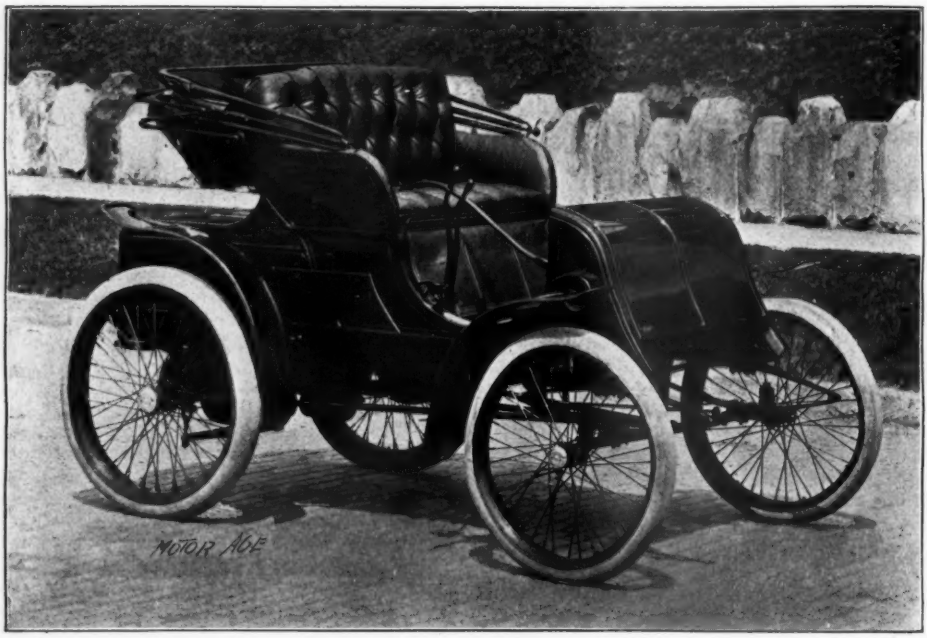
Make a box of tin plate about eight inches deep and ten to fifteen inches in diameter. Run through the bottom of this box a small branch pipe from the exhaust from the engine, to maintain the gasoline at the proper temperature. Before soldering on the cover to this box, take a long strip of tin plate 7½ inches wide and fasten to each side of it a strip of loosely woven flannel of the same dimensions. Then solder this strip of tin plate to the cover of the box in the form of a spiral with about two inches between coils, until the coil has reached the side of the box. Cut one hole in the cover at the center of the spiral for the admission of air and one at the end for the exit of vapor. Attach a feed pipe at the exit, leading to the admission valve of the engine, provided with a suitable valve to admit air in variable quantities. The proportion of air to vapor should be ten to fifteen to one.

To determine the actual, or indicated, horsepower of a given engine, use the following formula:

$$\text{I.H.P.} = \frac{\text{L.A.N.P.}}{33{,}000}$$

Where L equals length of piston stroke in feet; A equals area of piston in square inches; N equals number of explosions per minute; and P equals mean pressure in pounds per square inch on piston. Of course the mean pressure can not be obtained without the use of expensive testing apparatus. The matter can be arrived at in a rough manner, however, by taking the mean pressure as 2½ times the maximum compression of the explosive mixture, to ascertain which rough experimental apparatus can be easily constructed.

To attempt to tell how to determine the dimensions of an engine designed to give a predetermined horsepower, would be to go into the whole theory of gas engine construction, a subject altogether too voluminous for this department. An excellent series of articles on this subject appeared in Machinery (15 Murray Street, New York City) in its issues of November, 1899, to April, 1900, inclusive.—Ed.



THE LATEST WINTON MODEL.
Eight horsepower, with a radius of travel of 100 miles.—The box in front is a receptacle for wraps and baggage.

AUTOMOBILE NOTES FROM GERMANY

Berlin, May 18.—The Norwegian government has just ordered a motor-car from a well known German firm for the conveyance of mitrailleuse, munition and two soldiers during times of war.

Frankfort-on-the-Main is planning an exhibition on an extensive scale, and the committtee have received most satisfactory promises from all of the chief manufacturers in the midlands. Ten thousand marks have been subscribed as a guarantee fund up to the present.

The well known German Adler cycle factory at Frankfort-on-the-Main is about to put a new motor-car on the market, which is to uphold the reputation the firm possesses for good and solid workmanship in every detail.

The very latest Berlin fad is a tiny Benz auto-car for a table ornament, or to be used as a cigarette case, or, if the possessor be a lady, bonbonniere. It is an exact miniature model, nickel plated and burnished; the seat can be raised and discloses a little box, whilst the pneumatic tires, lanterns, bell, brake and other details were most faithfully copied on this very up-to-date toy.

Motor road racing is growing very popular in Germany, although an anxious feeling is spreading owing to the late French regulations forbidding both motor road racing and motor pacing on the road. What a retrogressive movement this is, to be sure, and public sympathy has gone out to Huret, who was last year's winner of Bordeaux-Paris and who has been looking forward to even bettering his brilliant performance of 1899. Veteran Josef Fischer, however, openly states his satisfaction at having to revert to the quads and triplets of a past age, as he says that personal talent will be able to develop itself more freely now that the mechanical aids are barred from assistance. This seems a very selfish argument, when one considers the blow aimed not only at the sport but at the industry as well, and it is greatly feared that other countries will follow the French example and lay a veto on motoring as a sport and an aid to the creating of fast times.

The Mitteldeutsche Automobil Club held a race on May 6, starting from a little place close to Eisenach; the route was 140.6 kilometers in length. Six racing cars and six touring cars of various descriptions set out, forming divisions 2 and 3. No entries had been received for division 1, motor-tricycles. Herr Willy Tischbein, of Hanover, carried off the prize in the second division, having taken 4 hours 23¾ minutes to accomplish his victory, whilst Baron Scarisbrueck came home second. An engineer named Vestereich was successful in the third division whilst Harry Ehrhardt, of Eisenach, a boy of eleven years of age, most ably seconded him.

The automobile clubs of Germany have formed a provisory union and a committee pro tem. with the Duke of Ratibor as president, till a meeting of all the clubs interested in automobilism has been called, when a definite organization is to take place.

To have an electrical omnibus roll into one's shop, sweeping the door and show windows away with it on its way and depositing a load of terror-stricken passengers in the middle of the floor is neither a pleasing nor an every day occurrence; yet it happened in Berlin recently. The omnibus was coming up the main street of the city, the Friedrich Strasse, from the Stettiner railway station and turned into a cross street. The bend had been negotiated and the driver was guiding the omnibus into its proper position on the right hand side of the street when the brake suddenly gave way and before the driver could give the 'bus a different direction it had jumped the curbstone and dashed into a well known baker's shop, splintering the framework of the door and shattering the windows. Then it stopped suddenly, to the great relief of the poor girl behind the counter, who thought her last moment had arrived and was paralyzed with fright. The lady passengers were shrieking and the men curs-

ing, whilst a crowd at once gathered to render such assistance as was necessary. Workmen were at once brought to back the cumbersome vehicle out of the shop and attend to the repairs, whereupon the omnibus proceeded on its way minus its passengers, of whom there were eight at the time of the accident.

The police authorities of Munich have rendered themselves ridiculous by decreeing that the number of automobiles permissible in the Bavarian capital must be confined to twenty-five! A most energetic protest was at once raised and as a consequence of constant petitioning this laughable restriction has been withdrawn, the government of Upper Bavaria having addressed a note to the police president of Munich to the effect that a law such as the above is injurious to trade and incompatible with progressive ideas.

The German papers have reproduced a picture of an automobile United States mail car, as well as a report on the introduction of autocars into the postal service, penned by First Assistant Postmaster General Perry S. Heath. One paper remarks curtly and to the point, "Would we were they."

CAMPING A LA AUTOMOBILE

Denver, May 28.—The correspondent of the Motor Age has just returned from a trip to Manitou on business quite foreign to that of looking for news for a motor-vehicle paper, and, most unexpectedly, ran across something which will surely be of interest to the readers of this publication—for, here in the "wild and woolly" we have something in the automobile line, the like of which has not been seen in the east, at least so far as the motor-vehicle papers have chronicled.

But the story will best be told as I found it.

Having finished my business at Manitou and having no necessity for getting back to Denver in a hurry, I determined to take a horseback ride through a part of the region that has a never-ending attraction for me—despite the fact that I have traversed every foot of it, time and time again. I refer to the charmed region of the Garden of the Gods and Glengary, the latter a private estate which lies adjacent to the government park. I have tramped over it afoot, have scoured across it numberless times on horseback and have pedaled all over it on my trusty bicycle.

I secured the best horse that the stable at Manitou afforded—a well bred horse one would have said, if the marks of the branding iron had not shown all too plainly on his shoulder—an animal with just enough mettle to make it an interesting task to bring him to an understanding as to who was master. A two-hour, steady gallop made me feel like dismounting for a few minutes and slaking my thirst. I was in the Garden of the Gods and I knew that there was but one place there where anything like an inn could be found, and, accordingly, I turned my horse's head towards the "relic house," known to everyone who has visited this famous government curiosity shop of the glacial period.

The knowing horse had been there many a time before, and, having at last conceded that I was his master, needed no hint from the rein to keep in the right direction. Feeling that we—the horse and I—had settled the question of mastery and being an idiotic lover of nature, I was paying little attention to the beast, when, without the least warning, he shied in a manner that almost unseated me. However, long training in the saddle made me pull myself and the horse together, almost instinctively. The horse was not easily quieted, though, and continued to prance and try to turn around and run. So busily was I engaged, for the next few minutes, that I did not see the cause of his fright. Finally, however, I discovered it in an automobile—a

little runabout which had by this time come to a complete stop and was then certainly innocent enough in appearance, even from an equine standpoint. Having at last quieted the horse, I heard a voice from the runabout apologizing—needlessly, it seemed to me—for having been the cause of the trouble and inviting me to go on before he started again.

Now, if there is one thing that I hate more than another, it is to have anyone on going in the direction in which he was headed to soon come in sight of it, he warned me that he was about to start, and went off noiselessly, but leaving a trail of steam behind him. Even though it were a small one the horse did not relish the sight and was soon at his capers again and kept me busy until the runabout stopped before the relic house.

I sprang from the saddle, carelessly missing my hold on the bridle as I did so.

HIS FIRST SIGHT OF AN AUTOMOBILE.

think that there is a horse alive that I cannot master under any and all circumstances. I therefore thanked the gentleman and asked him, as a favor, to go on, saying that I considered it a duty that I owed to progress to make the horse understand that motor-vehicles were something with which he must become acquainted. The gentleman laughed good humoredly and replied that he would be more than glad to accommodate me, but begged that I return the favor by telling him the way to the relic house. After he had learned that he had but to keep

As might have been expected, the horse bolted. Just at that moment the fat host appeared at the door. Seeing the auto and the horse apparently intent on reaching New Mexico in short order, he made a natural mistake.

Giving me a nod of recognition, he said: "Too bad, too bad! But never mind. I'll send a boy to try to catch him. If he can't I'll lend you a nag to take you back. Come from Manitou or Colorado Springs?"

"Blank you for a fat old fool!" I exclaimed, in no amiable humor. "Don't

you see that that fool horse wears a saddle?"

"Sure enough," responded the host; "but where is the other horse then?"

Of course I could not help laughing and was joined by the driver of the auto. The host looked at us blankly while I merely pointed at the front of the vehicle. It was then for the first time that he noticed the absence of shafts. His face wore a puzzled look and then brightened.

"Is that one of them au-to-mo-BEELS?" he inquired.

"No," said the driver.

"Then what in blank is it?"

"An au-to-MO-bile."

"An au-to-MO-bile, hey? Well, I don't see the difference. Better come in, hadn't you? Don't know as I blame the horse so much, after all."

I was feeling better natured by this time and asked the stranger if he would join me in such liquid refreshments as the hostelry afforded. He accepted the invitation and we exchanged names. During the course of the conversation inside I let drop the fact that I was a newspaper man.

"A newspaper man!" exclaimed my new found friend. "I was about to ask you to take supper with myself and my friends, but I am afraid that if you allowed it to become known that you were a newspaper man your reception would not be as cordial as I would like to have it—after the inconvenience I have caused you."

"No inconvenience at all," I replied. "It was my own fault. Besides, I can borrow a nag from our fat friend, the host, and have it sent over from Manitou. The horse I was riding will make straight for his stable."

"Glad to know that," returned my friend; "but there is no need of borrowing a horse. I will take you to Manitou in short order, whenever you are ready to go. But you must come to our camp for supper. You will see something that will interest you as a newspaper man."

"But I thought newspaper men were not welcome?"

"Well, I hardly meant that. You see my friend, Mr. Fiske, with whom I am camping, is one of those men who does not like newspaper notoriety. Recently a paper called the Motor Age got from me a story about him and published it. He did not like it, especially as the article was copied all over the country and he has been in receipt of scores of letters about it. It was about his having an office in an automobile, so as to save time in going to and from his place of business."

"Indeed?" I said, very innocently.

"Yes. But I told him that no inventor of a useful novelty had any right to expect that the knowledge of it would be kept from the newspapers for long and that he ought to be a progressive enough man to bear his share of the inconvenience. I think I convinced him, although he would not admit it.

"Now you are going to supper with me, but you must not say anything about being a newspaper man. I will tell Fiske after you are gone."

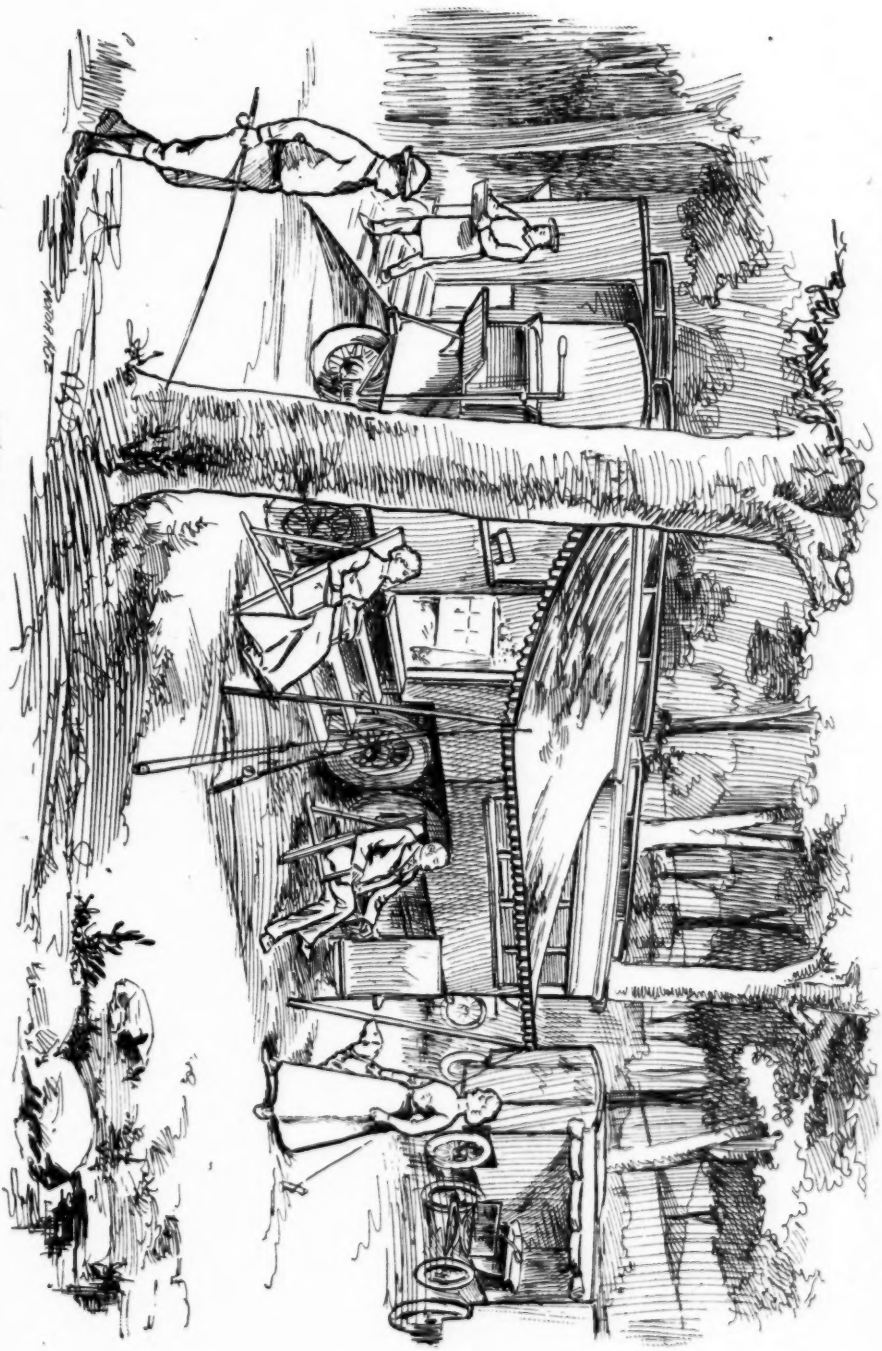
Of course I could not resist the invitation, and before long was seated in the runabout and on the way to the camp. In reply as to what I was to expect, my friend told me "to wait and see."

Imagine my surprise, then, when we at last reached the camp, to see, not a tent but an assembly of automobiles. I was certainly taken by surprise.

There, seated under an awning, was Mr. Fiske, in a business suit that gave no evidence of its owner being the multi-millionaire that I knew him to be. With him was his wife and another lady, the wife of my pilot, as I learned from the introductions that followed. An account of the predicament in which I had been left on account of the little steam runabout was, of course, given at once.

But I must give a description of the scene that greeted my astonished eyes. Besides the runabout there were no less than five other automobiles of totally different appearance. Four of them looked very much like street cars or—to be more exact—like Pullman cars on a small scale, except that they were fitted with wheels having mammoth pneumatic tires. The other looked very much like a furniture van.

The one before which the party was sitting, in folding steamer chairs, had an awning stretched from its side to two poles, to protect the campers. It had a



MULTI-MILLIONAIRE FISKE'S AUTOMOBILE CAMP.

door at the side which might be reached by folding stairs, and a number of windows, very much like those of a street car. Within could be seen a table set for supper and another door at the opposite side, through which a man came and went, making preparations for the evening meal. This door led, as I found out later, to another automobile which was utilized as a kitchen. On occasions like the present, the two were drawn up side by side and connected by a short—what shall I call it? Let me say gang-plank for want of a better word. A removable hood served to keep out the rain, when necessary.

Back of the automobile which served as a dining room was another, likewise connected to it. This one was a combined sleeping room and living room—perhaps I should say drawing room. It was fitted with two berths, very similar to the lower berths in a Pullman car, a small bookcase and writing desk, and a few other articles of furniture, all of which were secured to the walls. One berth was at one end of the car and one at the other, and there was a partition that could be set up to divide it into two rooms at night and removed in the day.

Back of the kitchen was a fourth vehicle which was similar to the one last described, but not so elaborate. It was for the servants, of whom there were four—all men. At a distance was the fifth big vehicle which served as a storehouse. At its side was a canopy large enough to entirely shelter the little runabout in bad weather. The other vehicles needed nothing to protect them, being constructed for use in all weathers.

Mr. Fiske very courteously showed me through the various vehicles, being, I thought, pleased to have the opportunity to do so. He explained that, when traveling, the vehicles were coupled into trains, one of two cars and one of three, unless the roads were particularly bad, when each could be used separately. One, the servants' vehicle, was fitted with a particularly powerful motor, that was guaranteed to make it "walk up the side of a house with another vehicle in tow," as Mr. Fiske explained it, adding that he had never had occasion to test it, as in the short time he had used his camping train he had not encountered any very bad roads.

I expressed my admiration of the whole arrangement and also my surprise that I had not heard of it before—almost betraying myself into saying that I was a newspaper man.

"Not strange at all," said Mr. Fiske. "I have taken every precaution that the news of my train should not get out. I am averse to newspaper notoriety in itself, and I knew—and that was worse still—that if the news of such a novelty did get out, I would have no peace at all, but would be pestered to death with newspaper men and curiosity seekers.

"With this in mind, I made it a condition of the contract with the maker of my vehicles that no mention should be made of them until after the summer was past."

"You dislike newspaper men, then, Mr. Fiske?" I inquired.

"Not a bit," he replied. "They are, as a rule, very clever fellows, but once they get to talking about a man, they can cause him all kinds of inconvenience and loss of time.

"Why," he continued, "my friend who brought you here told the story of my automobile office to a newspaper friend of his and it was printed. It might not have done much harm if he had not prefixed my name by the odious (to me) title of multi-millionaire. That caught the daily newspapers and the story went the rounds of the press and resulted in my being flooded with letters asking all sorts of foolish questions. I finally found a way out of that difficulty, however, for I had my secretary send all the letters to the maker of the vehicle and now he is my friend for life. I understand that he has taken a considerable number of orders for similar office-automobiles."

"But how did you escape the newspaper men with this big caravan?" I asked, in wonder.

"Easy enough," and Mr. Fiske smiled. "I had the caravan shipped out on a special train that landed it at one of our stations-to-be—I am interested in one of the railroads, you know. Well, this station consists of a switch and a signboard—nothing more. The vehicles were loaded on the train and covered up so that

not even the train men knew what they were. We were left at this siding and my own men unloaded the freight, and, by the time the train men came back, three hours later, there was nothing left but the empty cars. Of course our party occupied a private car going out.

"Once we were clear of the railroad, we kept as far from civilization as possible. Indeed, this is the closest we have come yet, and we would not be as close as this if we were not nearly ready to return."

"And suppose I should be a newspaper man, Mr. Fiske?" I could not resist asking.

"Wouldn't make any difference," he replied. "Before the news could get around I would be back in New York and then the letters would be turned over to the automobile maker."

He looked at me quizzically and then said: "You are a newspaper man!"

There was both conviction and question in his tones. I could do nothing but laugh and confess. He laughed, too, and declared that I was welcome to make any sort of a story I liked of the adventure, but confessed to some little chagrin that he should not have succeeded in keeping away from all newspaper men until his trip should have been finished.

By this time we heard a bell, and my host remarked: "There is a gong on each of the vehicles, but up to the present time we have seldom had occasion to use one except to call the party to their meals."

Supper was served in the novel dining room, and, except that the quarters were somewhat small, one would not have realized that he were not in the dining room of a palatial residence in New York City. During the course of the meal it was explained to me that the runabout had been used whenever it was necessary to enter any of the towns for supplies, which was not often, as the storehouse on wheels held almost everything necessary to excellent living, and what it contained had been supplemented by the rods and the guns of Mr. Fiske and his friend.

Mrs. Fiske protested that the next time they went on such a trip they must make some arrangements to take a cow along, as she could not endure condensed milk. She said that if a cow could not keep up with the procession, they might have a vehicle which could be used as a stable, as well as one that could be used as a kitchen.

Then Mr. Fiske, after explaining to me that he had been brought up on a farm, went into a long dissertation on the conditions that were necessary in the surroundings of an animal which was to be depended upon for a supply of the lacteal fluid, and ended by telling Mrs. Fiske that, if they did carry a cow along, the milk that she would give would not be half as good as condensed milk.

Mrs. Fiske seemed skeptical and, as if to clinch his argument, her husband said: "Didn't we have trouble enough getting cooks and other domestics that we could depend on as motor-men, without trying to find a combination of motor-man and milkmaid?"

"I don't see any trouble in that," replied Mrs. Fiske, "when I am married to a man who boasts that he was brought up on a farm."

When I began to suggest that I had better be going, saying that if I were taken as far as the relic house I would get a horse, my hints were promptly vetoed with the answer that I must remain there for the night. I did not see where I was to be lodged unless it were with the servants, and I made a mental resolution that if such a thing were attempted I would bid my hosts a cool good evening and make my way, as best I might, to the relic house on foot. No such alternative was forced upon me, however, for, when the time to retire arrived, I was shown to a very comfortable bed in the erstwhile dining room.

"We prepared for just such an emergency," said Mr. Fiske, "and you are the first one to whom we have had an opportunity to offer our hospitality since we have been on the trip."

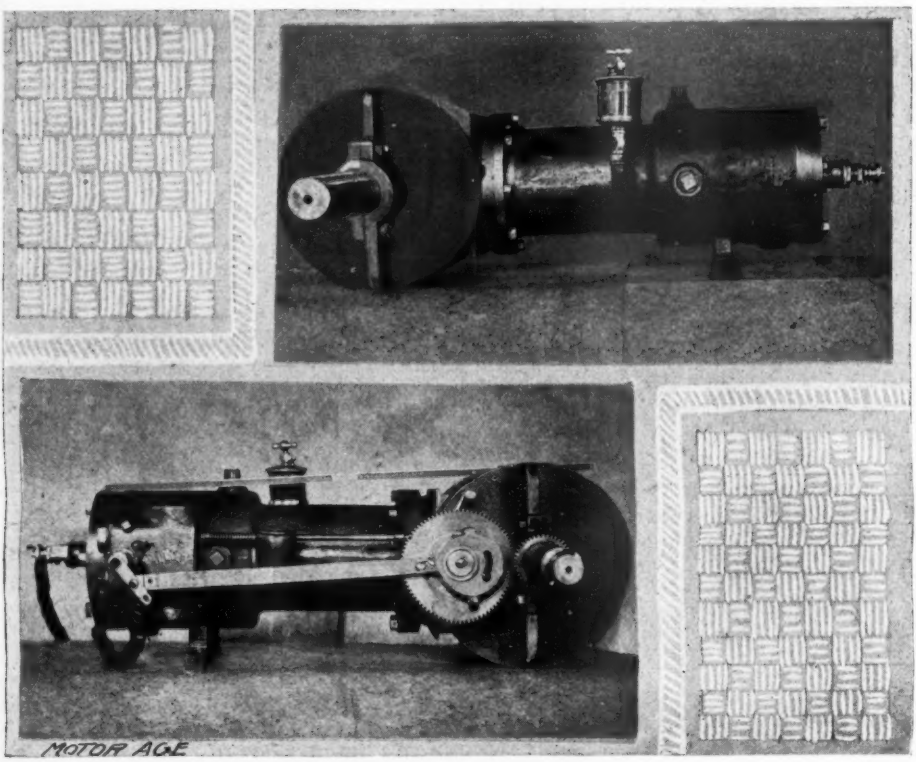
I enjoyed a sound night's sleep, not waking, in fact, until I was aroused by what seemed to me to be an unnecessary rattling of dishes in the next car.

I might spin the account of those two days out indefinitely, but I have already told the most that will be of particular interest to those whose interests are in automobilism per se, and will, accordingly, stop.

NEWS OF THE MOTOR INDUSTRY

EMPIRE GASOLINE MOTOR

The accompanying illustration shows a view from either side of a gasoline motor which is built by the Empire Motor Works, 898-900 Washington Street, Buffalo.



EMPIRE FOUR HORSEPOWER MOTOR.

The engine shown is a single cylinder, balanced engine operating on the Otto cycle principle and guaranteed to develop four horsepower. It has 4⅝-inch bore by 6-inch stroke.

Messrs. Schultze and Frey, the proprietors of the company, are experts, both practical and theoretical, and, after considerable experimenting, they decided that it would be unwise to put out engines all of whose parts were not sufficiently heavy to stand all the strains and hard work which were sure to be put on them by the novices into whose hands they were bound to fall. At the same time they appreciated the necessity of having the motors compact. How well they have accomplished this object will be seen by reference to the cut, which shows a two-foot rule laid on the cylinder of one.

A new sparking device is fitted for which patents are pending. It is a shifting spark and by means of it the engine can be regulated at any speed from 200 revolutions a minute up to ten times that number. The makers, however, do not advise any such speed as the latter, as it greatly shortens the useful life of the engine. They recommend that the speed be kept between 200 and 900 revolutions,

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Secretary

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IT WILL CLIMB STEEP GRADES
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IT WILL REVERSE
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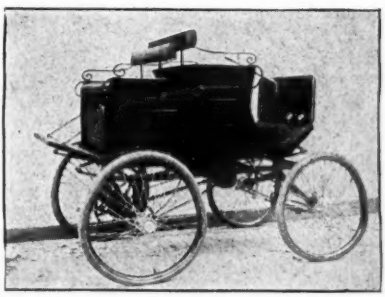
IT WILL CARRY YOU SAFELY
BRING YOU HOME



No Visible Exhaust

We use fully 75 per cent of the heat of the exhaust while other makers discharge it.

GOOD
AGENTS
WANTED....

AUTOMOBILE DEP'T
SLAYMAKER-BARRY CO.
CONNELLSVILLE, PENNA.

which gives plenty of variation in speed for a vehicle which is properly geared.

The motor is twenty-six inches long and ten high, carries a 1½-inch crank, with balance discs attached, has a closed base, wipe spark, detachable cylinder and base and weighs 220 pounds. It is water-jacketed, including the cylinder head.

A Motor Age representative, on a recent visit to the factory of the company, saw one of the engines illustrated, drive, at good speed, a fifty-foot shaft to which were attached two fourteen-inch and two sixteen-inch swing lathes, two universal milling machines, two drills, one eighteen-inch shaper and one large and one small grinder.

The company is making also a two-cylinder, four-brake-horsepower motor, a two-cylinder, eight-horsepower motor and a one-cylinder, two-horsepower motor.

A NEW BICYCLE MOTOR

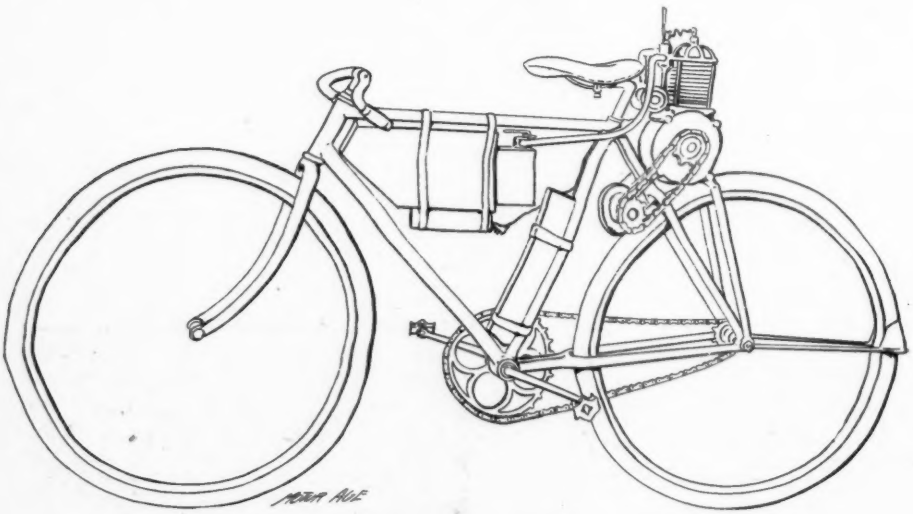
The Boulevard Cycle & Motor Co., of 2312 Broadway, New York City, are marketing a small motor, intended, primarily, for attaching to bicycles, but which can be adapted to other work as well. The company gives the following particulars:

The special features of the motor are the light weight and compactness. It weighs but twenty pounds and is only twelve inches high. It develops one brake horsepower at 1,000 revolutions a minute. Ignition is electric and is effected by a double wipe spark, which is adjustable.

When used on a bicycle, the motor is attached by a clamp back of the saddle, as shown in the accompanying illustration. It drives the rear wheel by means of a friction wheel with ball bearings, which is connected to the engine shaft by chain and sprocket wheels.

The motors are sold complete or the castings are furnished, in either aluminum bronze or iron. The complete motors are sold at $75 and the castings for $10 in iron and $15 in aluminum bronze. These prices do not include, however, accessories such as batteries, spark coil, gasoline tanks, carbureter or muffler, with the complete motor, or bolts, nuts, springs or shafts with the castings.

Patents are now pending for the motor.



BOULEVARD MOTOR ATTACHED TO BICYCLE.

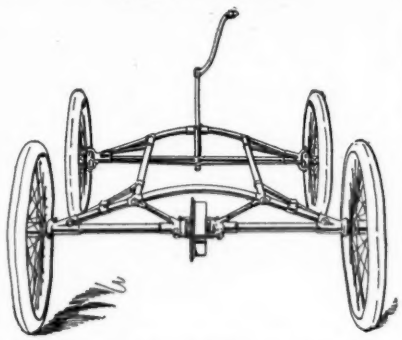
"PRACTICAL TREATISE ON GEARING"

The Brown & Sharpe Mfg. Co. of Providence, R. I., have just issued the sixth edition of a book bearing the title that heads this notice. The scope of the work is best told in the preface, the whole of which is contained in the following brief statement: "This book is made for men

WHY BOTHER

To Build RUNNING GEARS?

Save time, experiment, expense and trouble by buying ours complete.



They are ready for enameling and wheels and will take any carriage body with springs, motor, tanks, etc.

—WRITE US—

MILWAUKEE AUTOMOBILE CO.,

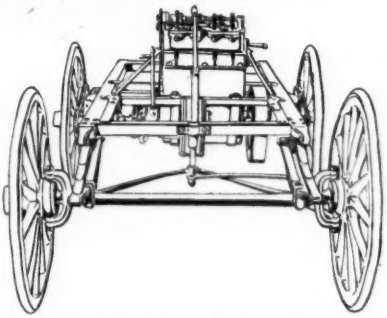
19th St. and St. Paul Avenue,

MILWAUKEE, WIS., U. S. A.

RUNNING GEAR

COMPLETE

With wheels, solid or pneumatic tires, transmission gear, giving two speeds forward and reverse, and our 4½-horsepower, four-cylinder, shifting spark, gasoline motor, having variable speed from 100 to 1,500 revolutions a minute. The addition of a body, gasoline and water tanks, upholstery and paint makes it a complete vehicle capable of going anywhere and at any speed up to thirty miles an hour. Read complete description in Motor Age of April 12, 1900.

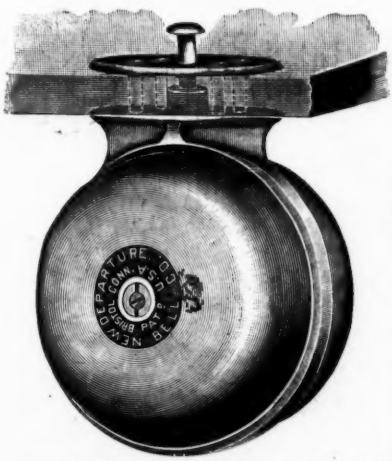


Send for catalogue of the best motor in any country, made in various sizes and number of cylinders, upright and horizontal, with fuller particulars of running gear.

BUFFALO GASOLINE MOTOR CO.

Dewitt and Bradley Sts. BUFFALO, N. Y.

NEW DEPARTURE AUTOMOBILE



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Two gongs, differing in tone. Depressing plunger strikes one gong, releasing it strikes the other, thus producing a chime peculiarly distinct and noticeable—different from any other alarm ever heard.

Gongs made from finest quality bell metal, carefully turned, and finished throughout in full nickel plate highly polished and burnished.

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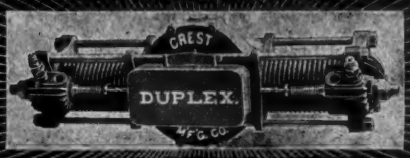
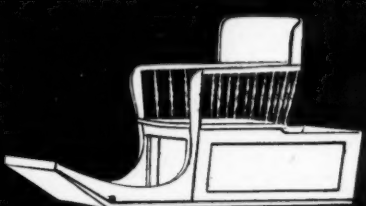


CREST GASOLINE MOTORS FOR TRICYCLES AND AUTOMOBILES.

BODIES FOR MOTOR VEHICLES

A SPECIALTY.



Fine Carriage Work and Ironed Gears. Built-Up Woodwork.

CORRESPONDENCE SOLICITED.

CINCINNATI PANEL COMPANY — CINCINNATI, OHIO.

in practical life; for those who would like to know how to construct gear wheels, but whose duties do not afford them sufficient leisure to acquire a technical knowledge of the subject."

The work sets forth with remarkable clearness the information which it gives, avoiding technical language as much as possible and explaining what is used in almost primer style. The work will certainly prove valuable to those who have anything to do with gear cutting.

In the present edition the chapter on "Cutting Spiral Gears on a Universal Milling Machine" is entirely new and adds much to the work.

WINTON COMPANY ENLARGES

Cleveland, Ohio.—The Winton Motor Carriage Co. has recently taken over a large addition to its factory and now has double its former floor space. Machinists are being secured as rapidly as possible and in the near future the company will have double its former capacity. The company has just installed a brass foundry and in the future will produce all its own brass and bronze castings. The company has just shipped a two-seated phaeton to William Rockefeller, at Tarrytown, N. Y., the fourth Winton purchased by Mr. Rockefeller.

WANTS BOILERS AND ENGINES

L. E. Hoffman, general manager of the Hoffman Bicycle Co., of Cleveland, has been making quiet investigations with a view to manufacturing motor-vehicles and has decided on the steam system as being the most practical. He is desirous of corresponding with manufacturers of steam engines and boilers adapted for this purpose.

SELLING MOTOCYCLE PARTS

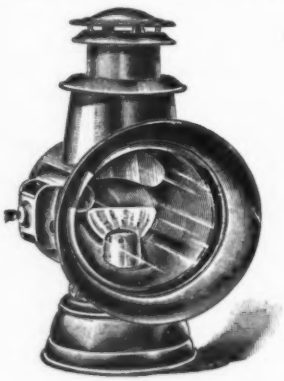
The Banker Brothers Cycle Co., of Pittsburg, write that they are making a specialty of supplying, separately, the motor which is applied to their imported Werner motocyclettes, recently described in the Motor Age. They supply the motor with attachments such as battery, carbureter, spark plug, induction coil, wires, driving belt, drive rim and special front forks and handle-bar. With these parts it is possible for any bicycle repair man to construct his own motor bicycle. A heavy front wheel and a coaster brake for the rear wheel is all needed in addition.

The company is prepared to make quotations on these parts.

The company also controls the sole United States rights for the manufacture of these machines and would be glad to enter into correspondence with any manufacturers that may be interested.

DIETZ AUTOMOBILE LAMP

The Dietz Automobile lamp, manufactured and marketed by the R. E. Dietz Co. of New York and Chicago, of which illustrations are here shown, is very attractive in its appearance besides being scientifically and mechanically well constructed. It burns ordinary kerosene and is constructed on the tubular principle. The makers say it holds enough oil to last twenty-four hours.



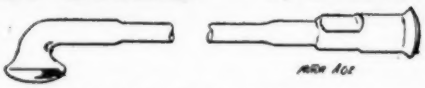
Dietz Automobile Lamp.

It is provided with an internal conical reflector which focuses the light and throws it directly ahead. The front of the lamp consists of a beveled moulded lens. At the back is a small lens of ruby glass. The reflector is made of rolled copper, silver plated.

The principle on which the lamp works can be seen by a glance at the sectional view, the arrows indicating the direction of the air as it is drawn in and passes through the hollow sides of the lamp, into the burner, and goes, with the products

SPOKES

We manufacture Spokes for Automobiles.



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We are prepared to make all kinds of **SCREW MACHINE WORK** for **AUTOMOBILES** and **MOTOR BICYCLES**

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GASOLENE MOTORS

VARIABLE SPEED CLUTCHES

For the BEST write to

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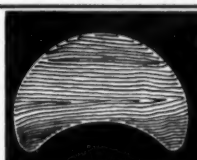

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Will Not Harden in Brazing . . . **Bike Steel Castings**

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Will Temper Like Tool Steel.

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Dixon's Pure Flake Graphite Lubricants for Engine Cylinders, Chains, Gears, Bearings, etc. Nothing can equal them.

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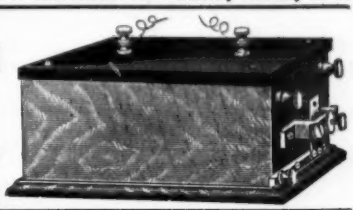

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Latest, Most Compact Design for Vehicles & Launches 4 to 12 B. H. P. : Blue Prints, $1.

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Send your blue prints or send dime for mine | All kinds Special Machine Work to order

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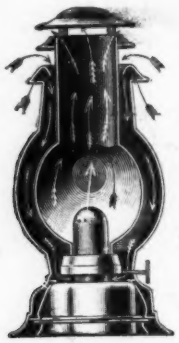
of combustion, up the chimney and into the open air. The result is perfect com-



Sectional View of Dietz Lamp.

bustion and freedom from the effects of winds.

The lamps are made in pairs and each is fitted with a socket for a bracket, which is furnished by the Dietz company when desired.

WILL MANUFACTURE STEAM VEHICLES

Rollin White, superintendent of the White Sewing Machine Co., of Cleveland, has been doing considerable experimental work with steam vehicles and has recently completed a carriage of this type. The company is making plans to go into the manufacture of vehicles of the steam variety.

Hartford, Conn., the home of the largest automobile factory in the world, is to have a parade of motor-vehicles on the Fourth of July.

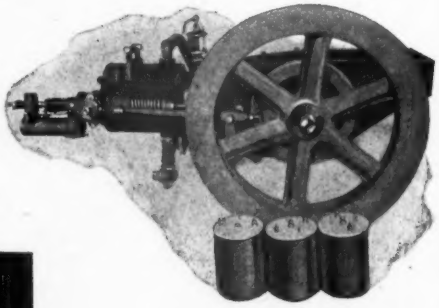
(AUTOMOBILE)

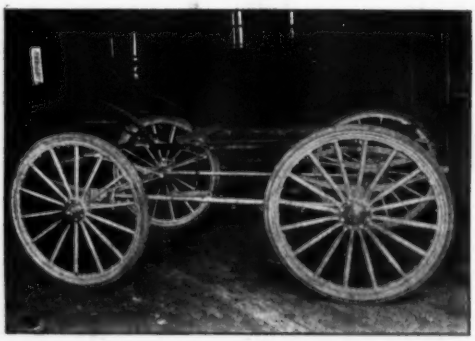
GASOLINE ENGINES

Running Gears, Transmission Devices, Mufflers, Supplies, etc.....

WE DELIVER ENGINES WITHIN ONE HOUR AFTER RECEIPT OF ORDER

Our engine is used on the Most Successful Motor Carriage in America. Less Noise, Odor and Vibration than any other engine on the market.





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MACHINE WORK

For Automobile Builders

Any kind of special work to order. Automatic Screw Machine jobs a specialty.

MILWAUKEE AUTOMATIC MACHINE COMPANY

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GRANT BALL COMPANY TRADE MARK CLEVELAND, O.

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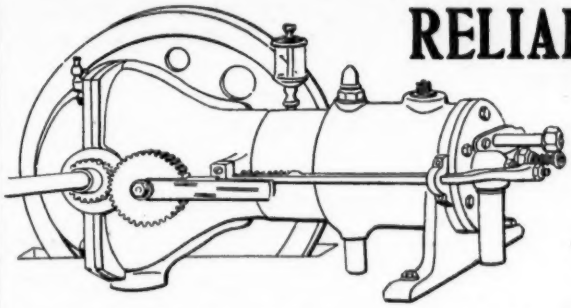
AUTOMOBILES

CAN FURNISH ALL SIZES

The GRANT BALL CO. Cleveland O.



RELIABLE MOTORS

FOR AUTOMOBILES

Working parts enclosed.
One oil cup for all bearings.
Perfect ignition.
Cheap running cost.

We also make transmission and running gears.

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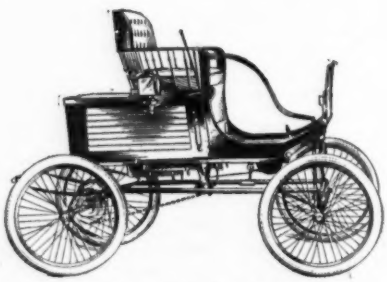

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